

6. (three times amended) Apparatus for detecting faults in a transducer including a secondary winding having at least two voltage outputs, the transducer being electrically connected to a logic circuit implemented in at least one of an on-board interface and an on-board controller, said apparatus comprising:

a short term filter for generating a first voltage value representative of a current value of a sum of the secondary winding output voltages;

a long term filter for generating a second voltage value representative of a non-faulted value of a sum of the secondary winding output voltages, at least one of said short term filter and said long term filter configured to maintain said second voltage value constant; and

a summer for generating a difference signal representative of a difference between the first voltage value and the second voltage value, said apparatus configured to detect faults in at least one of a rotary voltage differential transducer (RVDT) and a linear voltage differential transducer based on the difference signal.

15. (twice amended) Apparatus for detecting faults in a transducer including a secondary winding having at least two voltage outputs, the transducer being electrically connected to a logic circuit implemented in at least one of an on-board interface and an on-board controller, said apparatus comprising:

a short term filter for generating a first voltage value representative of a current value of a sum of the secondary winding output voltages, said short term filter comprising a one pole lag filter;

a long term filter for generating a second voltage value representative of a non-faulted value of a sum of the secondary winding output voltages, said long term filter comprising a one pole lag filter; and

a summer for generating a difference signal representative of a difference between the first voltage value and the second voltage value, if an absolute value of the difference between the first voltage value and the second voltage value exceeds a freeze threshold, then said long term filter maintains said second voltage value constant, and if the absolute value of the difference between the first voltage value and the second voltage value exceeds a fault threshold, then said apparatus generates a fault indicator signal, said apparatus configured to